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10/574,141	03/29/2006	Gerardus P. Karman	GB030174US1	7747

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EXAMINER	
SPAR, ILANA L	

ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
05/26/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/574,141	KARMAN ET AL.	
	Examiner	Art Unit	
	ILANA SPAR	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 April 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18 and 20-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18,20-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The following Office Action is responsive to the amendments and remarks received on April 12, 2011.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to

be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-18 and 20-28 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 and 20-27 of copending Application No. 10/574,142. Although the conflicting claims are not identical, they are not patentably distinct from each other because both inventions are directed to modification of an optical characteristic by controlling the color/grey scale level of the data. Claim 1 of the current invention teaches a display panel and driver of a three dimensional image display device, and a color compensation device that compensates for the viewing angle. Claim 1 of the copending application teaches the same display panel and driver of a three dimensional image display device, and a grey scale compensation device that compensates for the viewing angle. The color level and grey scale of the data are equivalent concepts, such that the current and copending applications are not patentably distinct.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1, 2, 5, 8, 13-18, and 23-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Marz et al. (US Patent No. 6,593,904).

With reference to claim 1, Marz et al. teaches a display device, comprising:

a display panel (30) having a plurality of separately addressable pixels for displaying a three dimensional image, the three dimensional image being comprised of a plurality of different views (56, 57, 58), each view displaying a different image from the other views, each view corresponding to one of a plurality of different first viewing angles with respect to a first axis, the pixels being grouped into a plurality of groups with each group including a plurality of pixels, a number of pixels in each group corresponding to a number of the different views, each pixel of each group corresponding to one of the plurality of different views of the three dimensional image, wherein all the pixels in the plurality of groups corresponding to one of the views display the different image of the one of the views (see column 6, lines 43-59);

a display driver (18) for controlling an optical characteristic of each pixel to generate an image according to received image data (see column 5, lines 9-15); and

a colour compensation device (28) for further controlling light transmission characteristics of a plurality of pixels within each group to compensate for said optical characteristic of each pixel based on a second viewing angle in a second axis of the display panel, wherein the second axis is transverse to the first axis, wherein a correction applied to each of the plurality of pixels within the group is different (see column 5, lines 28-53).

With reference to claim 2, Marz et al. teaches all that is required with reference to claim 2, and further teaches a back panel for providing a plurality of discrete sources of illumination (16), each group of pixels in the display panel being positioned to receive light from a respective one of the discrete sources of illumination (see column 4, lines 25-29).

With reference to claim 5, Marz et al. teaches all that is required with reference to claim 2, and further teaches that the display panel is a light-transmissive display panel adapted for viewing from a side opposite to the side on which the back panel is located (see column 4, lines 8-12).

With reference to claim 8, Marz et al. teaches all that is required with reference to claim 1, and further teaches that the optical characteristic is a light transmission characteristic and the display driver and colour compensation device are adapted to control the amount of light passing through each pixel according to a three dimensional colour image to be displayed (see column 5, lines 28-53 and column 6, lines 43-59).

With reference to claim 13, Marz et al. teaches all that is required with reference to claim 1, and further teaches that the colour compensation device is adapted to adjust a pixel drive voltage received from the display driver (see column 5, lines 28-53).

With reference to claim 14, Marz et al. teaches all that is required with reference to claim 1, and further teaches that the display panel includes colour clusters for each physical location within the image, a colour cluster comprising a plurality of said pixel groups each corresponding to a different primary colour, the colour compensation device adapted to control the optical characteristic of each pixel within a pixel group and each group within a cluster so as to produce an image colour for each colour cluster that is independent of viewing direction (see column 4, lines 21-24 and column 5, lines 28-53).

With reference to claim 15, Marz et al. teaches all that is required with reference to claim 1, and further teaches that inherent optical characteristics of the display panel are configured such that viewing angle dependence is reduced or substantially minimised relative to the first axis which is a y-axis (see column 5, lines 28-53).

With reference to claim 16, Marz et al. teaches all that is required with reference to claim 15, and further teaches that the colour compensation device serves to reduce or substantially minimize viewing angle dependence relative to the second axis which is a x-axis, wherein the second axis is orthogonal to the y-axis (see column 5, lines 28-53 and column 6, lines 43-59).

With reference to claim 17, Marz et al. teaches all that is required with reference to claim 16, and further teaches the display device incorporated into an object, in which

the x-axis is defined as the horizontal axis when the object is in normal use, and the y-axis is defined as the vertical axis when the object is in normal use (see column 5, lines 28-53 and column 6, lines 43-59).

With reference to claim 18, Marz et al. teaches a method for displaying a three dimensional image on a display device, the three dimensional image being comprised of a plurality of different views, each view displaying a different image from the other views, each view corresponding to one of a plurality of different viewing angles, the method comprising the steps of:

processing image data to form pixel data values for each one of a plurality of separately addressable pixels in a display panel, the pixels being grouped into a plurality of groups with each group including a plurality of pixels, a number of pixels in each group corresponding to a number of the different views, each pixel of each group corresponding to one of the plurality of different views of the three dimensional image, wherein all the pixels in the plurality of groups corresponding to one of the views display the different image of the one of the views as a function of an angle with respect to a first axis, the pixel data values each for controlling light transmission characteristics of a respective pixel to generate the different image (see column 6, lines 43-59);

applying colour correction values to a plurality of pixel data values within each group to compensate for an optical characteristic of each pixel in a second axis of the display panel, wherein the second axis is transverse to the first axis, by controlling an amount of light passing through each pixel according to a three dimensional colour

image to be displayed, wherein the colour correction values applied to each of the plurality of pixels within the group are different (see column 5, lines 28-53); and

using said corrected pixel data values to drive pixels of a display panel to generate said image (see column 5, lines 8-12 and lines 28-53 and column 6, lines 43-59).

With reference to claim 23, Marz et al. teaches all that is required with reference to claim 18, and further teaches that the colour correction values are derived from a transmission versus voltage characteristic of the display panel, the corrected pixel data values being used to adjust a pixel drive voltage applied to the display panel (see column 5, lines 28-53 and column 6, lines 43-59).

With reference to claim 24, Marz et al. teaches all that is required with reference to claim 18, and further teaches that the pixels are configured in colour clusters for each physical location within the image, a colour cluster comprising a plurality of pixel groups each corresponding to a different primary colour, the colour correction values being adapted to control an optical characteristic of each pixel within a pixel group and each group within a cluster so as to produce an image colour for each colour cluster that is independent of viewing direction (see column 4, lines 21-24 and column 5, lines 28-53).

With reference to claim 25, Marz et al. teaches all that is required with reference to claim 18, and further teaches configuring inherent optical characteristics of the display panel such that viewing angle dependence is reduced or substantially minimized relative to the first axis which is a y-axis (see column 5, lines 28-53 and column 6, lines 43-59).

With reference to claim 26, Marz et al. teaches all that is required with reference to claim 25, and further teaches that the colour correction values are applied to reduce or substantially minimize viewing angle dependence relative to the second axis which is a x-axis, wherein the second axis is orthogonal to the y-axis (see column 5, lines 28-53 and column 6, lines 43-59).

With reference to claim 27, Marz et al. teaches all that is required with reference to claim 26, and further teaches that the x-axis is the horizontal axis when the display panel is in normal use, and the y-axis is the vertical axis when the display panel is in normal use (see column 5, lines 28-53 and column 6, lines 43-59).

With reference to claim 28, Marz et al. teaches all that is required with reference to claim 18, and further teaches executing the method using a computer (see column 5, lines 8-26 - it is inherently known that in such displays a processor is used to execute the driving functions.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 3, 4, 9-12, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marz et al. in view of Gelsey (US Patent No. 6,344,837).

With reference to claim 3, Marz et al. teaches all that is required with reference to claim 2, but fails to teach line sources of illumination.

Gelsey teaches a three dimensional display having a plurality of line sources of illumination (see column 4, lines 21-29 and column 6, lines 60-65).

It would have been obvious to one of ordinary skill in the art at the time of invention that any type of backlight can be used to illuminate the three dimensional display pixels, as is well-known and commonly used in the art.

With reference to claim 4, Marz et al. teaches all that is required with reference to claim 2, but fails to teach point sources of illumination.

Gelsey teaches a three dimensional display having a plurality of point sources of illumination (see column 4, lines 21-29).

It would have been obvious to one of ordinary skill in the art at the time of invention that any type of backlight can be used to illuminate the three dimensional display pixels, as is well-known and commonly used in the art.

With reference to claim 9, Marz et al. teaches all that is required with reference to claim 1, but fails to teach a look-up table.

Gelsey teaches that the colour compensation device comprises a look-up table containing correction values to be applied in respect of each pixel within a group (see column 10, lines 2-4).

It would have been obvious to one of ordinary skill in the art at the time of invention to use a look-up table rather than carry out all necessary computations at the time of image display in order to reduce processing demands and lag time on the system.

With reference to claim 10, Marz et al. and Gelsey teach all that is required with reference to claim 9, and Marz et al. further teaches that the correction values are selected according to the viewing angle of a respective pixel within the group (see column 5, lines 28-53 and column 6, lines 43-59).

With reference to claim 11, Marz et al. and Gelsey teach all that is required with reference to claim 10, and Marz et al. further teaches that the correction values are selected so as to substantially normalise an intensity of colour and/or its colour point in the colour triangle as displayed by a group of pixels to be independent of viewing angle (see column 5, lines 28-53).

With reference to claim 12, Marz et al. and Gelsey teach all that is required with reference to claim 9, and Gelsey further teaches that the look-up table includes substitution values or offset values as a function of viewing angle to be applied to a frame store (see column 9, line 15 to column 10, line 4).

With reference to claim 20, Marz et al. teaches all that is required with reference to claim 18, but fails to teach a look-up table.

Gelsey teaches that the colour correction values are obtained from a look-up table containing correction values to be applied in respect of each pixel within a group (see column 10, lines 2-4).

It would have been obvious to one of ordinary skill in the art at the time of invention to use a look-up table rather than carry out all necessary computations at the time of image display in order to reduce processing demands and lag time on the system.

With reference to claim 21, Marz et al. and Gelsey teach all that is required with reference to claim 20, and Marz et al. further teaches that the colour correction values are selected according to a viewing angle of a respective pixel within a group (see column 5, lines 28-53).

9. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marz et al. in view of Balogh (US Patent Publication No. 2001/0028356).

With reference to claim 6, Marz et al. teaches all that is required with reference to claim 1, but fails to teach a lenticular array.

Balogh teaches a lenticular array (20) positioned adjacent to the display panel, each lenticle within the lenticular array focusing light from selected pixels in the display panel (see paragraph 36).

It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate a lenticular array into the device as taught by Marz et al. to focus the light emerging from each pixel and ensure that it is directed toward the particular viewing angle to ensure that the three dimensional image is viewed properly.

With reference to claim 7, Marz et al. and Balogh teach all that is required with reference to claim 6, and Balogh further teaches that each lenticle within the lenticular array is associated with a group of pixels (see paragraph 37).

Response to Arguments

10. Applicant's arguments with respect to claims 1-18 and 20-28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ILANA SPAR whose telephone number is (571)270-7537. The examiner can normally be reached on Monday-Thursday 8:00-4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571)272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bipin Shalwala/
Supervisory Patent Examiner, Art Unit 2629

ILS